

REMARKS

Claims 4-9 are presently pending in the Application and the Examiner objects to claim 8, due to an informality therein, and rejects claims 4 and 5, under 35 U.S.C. § 112, second paragraph, as being indefinite for the reasons noted in the official action.

Claims 5 and 8 are amended herein above and all of the presently pending claims are now believed to overcome the noted informality and to particularly point out and distinctly claim the subject matter regarded as the invention, thereby overcoming all of the raised § 112, second paragraph, rejections. These entered claim amendments are directed solely at overcoming the raised informality objection and the indefiniteness rejections and are not directed at distinguishing the present invention from the art of record in this case.

It will also be noted that the amendments to address the noted informality in claim 5 and the grounds for rejection of claims 5 and 8, under 35 U.S.C. 112, are fully supported by the specification, the drawing and the claims as originally filed and do not add any new subject matter to or alter the subject matter of the invention, the specification, the drawings, or the claims.

Next, claims 4-9 are rejected, under 35 U.S.C. § 103(a), as being unpatentable over Stephenson et al. '264 (U.S. Patent No. 6,467,264) in view of Herrmann '566 (U.S. Patent No. 3,851,566). The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the above amendments and the following remarks.

It will first be noted that after review of claims 4-9 and the cited prior art, and in order to advance prosecution and allowance of the present Application, claims 4-9 are amended to more explicitly and clearly recite the present invention and the features and limitations of the present invention that patentably distinguish the present invention over the cited prior art. In particular, it will be noted that claim 4 is canceled in favor of new claim 10, which is essentially a restatement of the limitations of claim 4, while claims 4, 5 and 8 are amended to more explicitly and clearly recite the patentable elements and limitations of the present invention, while claims 6, 7 and 9 are canceled as a consequence of the amendments of claims 5 and 8 and the replacement of claim 4 with new claim 10.

It will also be noted that in conjunction with the above amendments to the claims, and in order to more explicitly and clearly describe the present invention in the specification, the drawing and the claims, Fig. 1 and paragraph [020] of the specification are both amended to explicitly refer to and describe a first switch cylinder supply line 74 and a second switch supply line 76, both of which are present in the present Application as originally filed. It will be further noted that paragraph [020] of the specification is amended so that there is consistency between

the specification and the claims in the terms used to refer to the various elements of the invention.

Again, it will be noted that these amendments to the specification, the drawings and the claims are fully supported by the specification, the drawing and the claims as originally filed and do not add any new subject matter to or alter the subject matter of the invention, the specification, the drawings, or the claims.

Now considering the present invention as recited in independent claims 8 and 10 as amended herein above, and first considering new claim 10, the present invention as recited therein is directed to switch 1 for a vehicle transmission. As recited, the switch 1 includes at least one switch cylinder 2, a first switch cylinder supply line 74, a second switch supply line 76, an opening valve 26 connected between the first switch cylinder supply line 74 and a switch chamber 10, 12 of the switch cylinder 2, and a closing valve 28 connected between the second cylinder supply line 76 and the switch chamber 10, 12 of the switch cylinder 2.

The switch 1 further includes a ventilation supply line 58 and an exhaust line 60 wherein a first additional valve 62 is connected between the ventilation supply line 58 and the first switch cylinder supply line 74, a second additional valve 64 is connected between the ventilation supply line 58 and the second switch supply line 76, a third additional valve 66 is connected between the exhaust line 60 and the first switch cylinder supply line 74, and a fourth additional valve 68 is connected between the exhaust line 60 and the second switch supply line 76. According to the present invention as recited, therefore, the connections between one of the first switch cylinder supply line 74 and the second switch supply line 76 and the ventilation supply line 58 and the exhaust line 60, through the first, second, third and fourth additional valves 62, 64, 66, 68, may be selectively swapped so that a function of the opening valve 26 and a function of the closing valve 28, 32, 36, 40, 44, 48, 52, 56 may be selectively exchanged.

As described in the specification, this arrangement of switches, supply and exhaust lines and additional valves permits, for example, the connections between the first switch cylinder supply line 74 and the second switch cylinder supply 76 and the ventilation supply line 58 and an exhaust line 60 to be exchanged so that the closing valve may assume the role and function of the opening valve if, for example, there should be a failure of the opening valve, or the reverse.

Referring briefly to claim 8, it will be apparent that claim 8 is directed to the same invention as claim 10 but explicitly recites embodiments of the invention having a plurality of switch cylinders 2, 4, 6, 8 wherein each switch cylinder 2, 4, 6, 8 has a first switch chamber 10, 14, 18, 22 and a second switch chamber 12, 16, 20, 24, and corresponding pluralities of

opening valves 26, 30, 34, 38, 42, 46, 50, 54 and closing valves 28, 32, 36, 40, 44, 48, 52, 56. More specifically, claim 8 recites that the switch 1 includes a plurality of switch cylinders 2, 4, 6, 8 wherein each switch cylinder 2, 4, 6, 8 has a first switch chamber 10, 14, 18, 22 and a second switch chamber 12, 16, 20, 24, a first switch cylinder supply line 74 and a second switch supply line 76, a plurality of opening valves 26, 30, 34, 38, 42, 46, 50, 54 and a plurality of closing valves 28, 32, 36, 40, 44, 48, 52, 56, and that the first switch chamber 10, 14, 18, 22 and the second switch chamber 12, 16, 20, 24 of each switch cylinder 2, 4, 6, 8 are each connected to the first switch cylinder supply line 74 through a corresponding one of opening valves 26, 30, 34, 38, 42, 46, 50, 54 and to the second switch supply line 76 through a corresponding one of the closing valves 28, 32, 36, 40, 44, 48, 52, 56. It will be noted that the recitations of claim 8 referring to the ventilation supply line 58 and the exhaust line 60 and the first, second, third and fourth additional valves 62, 64, 66, 68 are essentially identical to those of claim 10.

Turning now to the cited prior art, Stephenson et al. '264 relates to and describes a hydraulic circuit for controlling a switch cylinder having first and second switch chambers wherein the circuit comprises a four valve bridge circuit connected between a pressure supply line and a drain line and the first and second switch chambers so that the first and second switch chambers are each connected to the pressure supply line and the drain line through a pressure supply valve and a pressure drain valve.

It is apparent, therefore, that the hydraulic circuit of Stephenson et al. '264 is similar to a limited part of the switch circuit of the present invention. More specifically, the Stephenson et al. '264 circuit resembles that part of the present invention comprising the switch cylinders and the associated first and second supply lines and the opening and closing valves connecting the first and second switch chambers to the switch cylinder supply lines.

In fundamental distinction between the present invention as recited in claims 8 and 10 and in claim 5 and the teachings of Stephenson et al. '264, Stephenson et al. '264 provides only a *single hydraulic path* between the hydraulic fluid source and drain and the valves of the four valve bridge circuit. As a consequence, and in complete and fundamental contrast from the present invention, the Stephenson et al. '264 hydraulic circuit does not provide first and second switch supply lines 74, 76 between the source and drain of hydraulic pressure and the valves of the four valve bridge circuit and thus does not, and cannot, exchange the roles and functions of the valves of the four valve bridge circuit.

Stephenson et al. '264 further does not and cannot teach or suggest a valve circuit, such as that of the present invention, which is comprised of first, second, third and fourth

additional valves 62, 64, 66, 68 connecting the first and second switch cylinder supply lines with a ventilation supply line 58 and an exhaust line 60.

As a consequence, the Stephenson et al. '264 hydraulic circuit does not, and cannot, allow the connections between one of the first switch cylinder supply line 74 and the second switch supply line 76 and the ventilation supply line 58 and the exhaust line 60 through the first, second, third and fourth additional valves 62, 64, 66, 68 to be selectively swapped so that a function of an opening valve 26 and a function of a closing valve 28, 32, 36, 40, 44, 48, 52, 56 may be selectively exchanged.

It is therefore the Applicant's position that the present invention, as recited in claims 5, 8 and 10, is fully and patentably distinguished over and from the teachings and suggestions of Stephenson et al. '264 under the requirements and provisions of 35 U.S.C. 102 and 35 U.S.C. 103. The Applicant accordingly respectfully requests that the Examiner reconsider and withdraw all rejections of claim 5, 8 and 10 over Stephenson et al. '264, under requirements and provisions of either or both of 35 U.S.C. 102 and 35 U.S.C. 103, and allow claims 5, 8 and 10 as amended herein above.

Next considering the teachings of Herrmann '566, Herrmann '566 relates to and describes an apparatus for controlling a hydraulic lift tail gate that is activated by two hydraulic cylinder and piston units 12, 13, each having a first hydraulic fluid chamber 42, 43 and a second hydraulic fluid chamber 28, 29 that are pressurized or drained to corresponding move the pistons 12, 13 actuating the tail gate. The first chamber 42, 43 of each cylinder and piston unit 12, 13 is connected to an outlet of a preselector valve 15 while the second chambers are separately connected to a second port of the preselector valve 15 through a corresponding one of bidirectional control valves 17, 18.

According to Herrmann '566, preselector valve 15 is connected from a source and a drain of pressurized hydraulic fluid and is operated to select whether the fluid path directly to the first chambers 42, 43 of cylinder and piston units 12, 13 through preselector valve 15 is to be the pressurized line or whether the fluid paths to the second chambers 28, 29 of cylinder and piston units 12, 13 through bidirectional control valves 17, 18 are to be the pressurized lines. As shown and described in Herrmann '566, bidirectional control valves 17, 18 are located directly in the hydraulic fluid path through cylinder and piston units 12, 13 and each will either block the flow of hydraulic fluid to or from the corresponding second chamber 28, 29 of the corresponding cylinder and piston unit 12, 13 when deactivated or will allow the flow of hydraulic fluid to or from the corresponding second chamber 28, 29 of the corresponding cylinder and piston unit 12, 13 when activated.

In summary, therefore, control valves 17, 18 select which of cylinder and piston units 12, 13 is to be activated by selecting which of the hydraulic flow paths to and from cylinder and piston units 12, 13 is to be open and which is to be blocked while preselector valve 15 selects the direction the selected one of cylinder and piston units 12, 13 is to move by selecting which of the first and second chambers 42, 43 and 28, 29 of cylinder and piston units 12, 13 is to be connected to the hydraulic pressure source and which is to be connected to the drain.

It is therefore apparent that the present invention as recited in claims 8 and 10 is fully and patentably distinguished over and from the teachings of Herrmann `566 for a number of fundamental reasons. For example, the Herrmann `566 circuit does not provide an opening valve and a closing valve for each chamber of the cylinder and piston unit, but instead provides only a single control valve 17 or 18 connected to the second chambers 28, 29 of cylinder and piston units 12, 13 while both cylinder and piston units 12, 13 share a single valve, that is, preselector valve 15 connected to the first chambers 42, 43 of both cylinder and piston units 12, 13. It is therefore obviously impossible for control valves 17, 18, operating either alone or in combination or in combination with preselector valve 15 to configure the Herrmann `566 hydraulic circuit so that the roles of control valves 17, 18 can be reversed or exchanged in any way.

Stated briefly, the configuration and types of control valves 17, 18 and preselector valve 15 is such that each valve can and does serve only a single function and the valves cannot be reconfigured in any way to exchange roles or functions or to allow any valve to assume the role or function of another valve, which is in complete and fundamental contrast to the present invention, as recited in claims 8 and 10 and thus in dependent claim 5.

In addition, and in further fundamental distinction between the present invention and Herrmann `566, it must be noted that Herrmann `566, in fact, does not have and does not teach or suggest any form or configuration of valves corresponding even generally to the opening and closing valves of the present invention that are connected to the chambers 28, 29, 42, 43 of a cylinder and piston unit 12, 13 to directly control the operations of the pistons of the switch cylinders. Herrmann `566 instead has one valve selecting which in which direction the piston of a cylinder and piston unit 12, 13 will move upon activation and two other control valves selecting which of the cylinder and piston units 12, 13 will be activated, which take singly or together have no resemblance or similarity of the opening and closing valves or the additional valves of the present invention.

In still further fundamental distinction between the present invention as recited in the claims and the teachings of Herrmann `566, it is apparent that the Herrmann `566 has only a

single hydraulic circuit communicating between the hydraulic pressure source and drain and cylinder and piston units 12, 13, with one leg of the circuit being directly from preselector valve (15) to second chambers 28, 29 of cylinder and piston units 12, 13 and the other being through control valves 17, 18 to first chambers 28, 29 of cylinder and piston units 12, 13, and there is only a single circuit between preselector valve 15 and the hydraulic pressure source and drain.

In complete contrast from the present invention as recited in claims 8 and 10 and thus in claim 5, therefore, Herrmann `566, like Stephenson et al. `264, does not teach or suggest providing first and second switch supply lines 74, 76 between the source and drain of hydraulic pressure and the valves controlling cylinder and piston units 12, 13 or the valves of the four valve bridge circuit and thus does not and cannot teach or suggest a circuit in which the roles and functions of the valves of the four valve bridge circuit can be exchanged.

In a like manner, and again like Stephenson et al. `264, Herrmann `566 fails to in any way teach, suggest, disclose or remotely hint at a valve circuit such as that of the present invention comprising first, second, third and fourth additional valves 62, 64, 66, 68 connecting the first and second switch cylinder supply lines with a ventilation supply line 58 and an exhaust line 60 and again cannot and does not describe a hydraulic circuit wherein the opening and closing valves of the switch cylinders can exchange roles and functions or assume the roles and functions of each other.

It is therefore the Applicant's position that the present invention as recited in claims 5, 8 and 10 is fully and patentably distinguished over and from the teachings and suggestions of Herrmann `566, under the requirements and provisions of 35 U.S.C. 102 and 35 U.S.C. 103. The Applicant accordingly respectfully requests that the Examiner reconsider and withdraw all rejections of claim 5, 8 and 10 over Herrmann `566 under requirements and provisions of either, or both, 35 U.S.C. 102 and 35 U.S.C. 103, and allow claims 5, 8 and 10 as amended herein above.

Lastly, considering the combination of Stephenson et al. `264 and Herrmann `566, it is apparent that while Stephenson et al. `264 describes switch cylinder control valves generally similar in configuration and operation to the opening and closing valves of the present invention, neither Stephenson et al. `264 nor Herrmann `566 describes or suggests providing first and second switch cylinder supply lines connected to the switch cylinder opening and closing valves and connecting to a ventilation supply line 58 and an exhaust line 60 through additional valves, such as the first, second, third and fourth additional valves 62, 64, 66, 68 recited in claims 8 and 10 and thus in dependent claim 5.

The switch control hydraulic circuit described by Stephenson et al. `264, in fact, does not include any form of valves or supply and drain lines outside of a connection between the hydraulic source and drain and the valves of the four valve bridge, and specifically does not describe or suggest the use of first, second, third and fourth additional valves 62, 64, 66 , 68 between a first switch cylinder supply line 74 and a second switch supply line and a ventilation supply line 58 and an exhaust line 60 to allow the opening and closing valves to exchange roles and functions or to assume the role(s) and function(s) of the other.

As discussed above, Herrmann `566 fails to in any way teach, suggest, disclose or remotely hint at the use of an opening valve and a closing valve for each chamber of the cylinder and piston unit but instead provides only a single control valve 17 or 18 connected to the second chambers 28, 29 of cylinder and piston units 12, 13 while both cylinder and piston units 12, 13 share a single valve, that is, preselector valve 15 that is connected to the first chambers 42, 43 of both cylinder and piston units 12, 13.

In addition, the configuration and types of control valves 17, 18 and preselector valve 15 as taught by Herrmann `566 is such that each valve can and does serve only a single function and the valves cannot be reconfigured in any way to exchange roles or functions or to allow any valve to assume the role or function of another valve, which is in complete and fundamental contrast to the present invention as recited in claims 8 and 10 and thus in dependent claim 5. It is respectfully submitted that it is obviously impossible for control valves 17, 18 of Herrmann `566, operating either alone or in combination or in combination with the preselector valve 15 of Herrmann `566, to be configured in any way that is structurally or functionally similar or analogous to the first switch cylinder supply line 74 and second switch supply line 76 and the ventilation supply line 58 and an exhaust line 60 and the additional valves, such as the first, second, third and fourth additional valves 62, 64, 66 , 68, as presently claimed.

It is therefore the Applicant's position that the combination of Stephenson et al. `264 and Herrmann `566, like Stephenson et al. `264 and Herrmann `566 considered separately, fails to in any way teach, suggest, disclose or remotely hint at the present invention as recited in claims 8 and 10 and thus in dependent claim 5 and, in particular, fails to in any way teach, suggest, disclose or remotely hint at the use of a first switch cylinder supply line 74, a second switch supply line ventilation supply line 58 and an exhaust line 60 and additional valves interconnected through additional valves such as the first, second, third and fourth additional valves 62, 64, 66 , 68, or the combination of an opening valve and a closing valve connected with each chamber of each cylinder and piston unit and, in turn, connected with a ventilation

supply line 58 and an exhaust line 60 and additional valves, such as the first, second, third and fourth additional valves 62, 64, 66 , 68, to allow the roles and functions of the opening and closing valves of the switch cylinders to be exchanges or assumed by one another.

In addition, and as discussed above, it is respectfully submitted that each valve in the hydraulic switch control circuits taught by Stephenson et al. `264 and Herrmann `566 can and only does serve a single function and the configuration of valves in Stephenson et al. `264 and Herrmann `566 does not permit the valves to be functionally reconfigured in any way to exchange roles or functions or to allow any valve to assume the role or function of another valve.

Stephenson et al. `264, for example and as discussed above, lacks any suggestion of a first and second switch cylinder supply line 74, 76 or of any form of first, second, third and fourth additional valves 62, 64, 66 , 68 for selectively connecting the first and second switch cylinder supply lines 74, 76 to a ventilation supply line 58 and an exhaust line 60, so that the functions of the valves of the four valve bridge circuit cannot be reassigned by operation of the first, second, third and fourth additional valves 62, 64, 66 , 68 and the first and second switch cylinder supply lines 74, 76. Herrmann `566, for example and as discussed above, does not even include valves corresponding to the opening and closing valves of the present invention, but instead has only one preselection valve 15 and one on/off control valve 17, 18 for each switch cylinder, and thus lack any form of switch cylinder control valves that could even possibly be reconfigured to assume the role(s) and function(s) of the other.

For these reasons, therefore, neither Stephenson et al. `264 nor Herrmann `566 teaches or suggests a valve configuration that would permit the valves to be functionally reconfigured in any way to exchange roles or functions or to allow any valve to assume the role or function of another valve and neither Stephenson et al. `264 nor Herrmann `566 contains any teaching, suggestion or motivation for combining the teachings of Stephenson et al. `264 nor Herrmann `566 to achieve some form of reconfigurable valve circuit. In fact, the only possible teaching or suggestion of a reconfigurable valve circuit, according to the present invention, is found only in the present Application.

It is therefore the Applicant's position that the present invention as recited in claims 5, 8 and 10 is fully and patentably distinguished over and from the teachings and suggestions of Stephenson et al. `264 and Herrmann `566, under the requirements and provisions of 35 U.S.C. 102 and 35 U.S.C. 103. The Applicant accordingly respectfully requests that the Examiner reconsider and withdraw all rejections of claim 5, 8 and 10 over Stephenson et al. `264 and

10/586,518

Herrmann `566, under requirements and provisions of 35 U.S.C. 103 or 102, and allow claims 5, 8 and 10 as amended herein above.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Stephenson et al. `264 and/or Herrmann `566 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,



Michael J. Bujold, Reg. No. 32,018
Customer No. 020210
Davis & Bujold, P.L.L.C.
112 Pleasant Street
Concord, NH 03301-2931
Telephone 603-226-7490
Facsimile 603-226-7499
E-mail: patent@davisandbujold.com

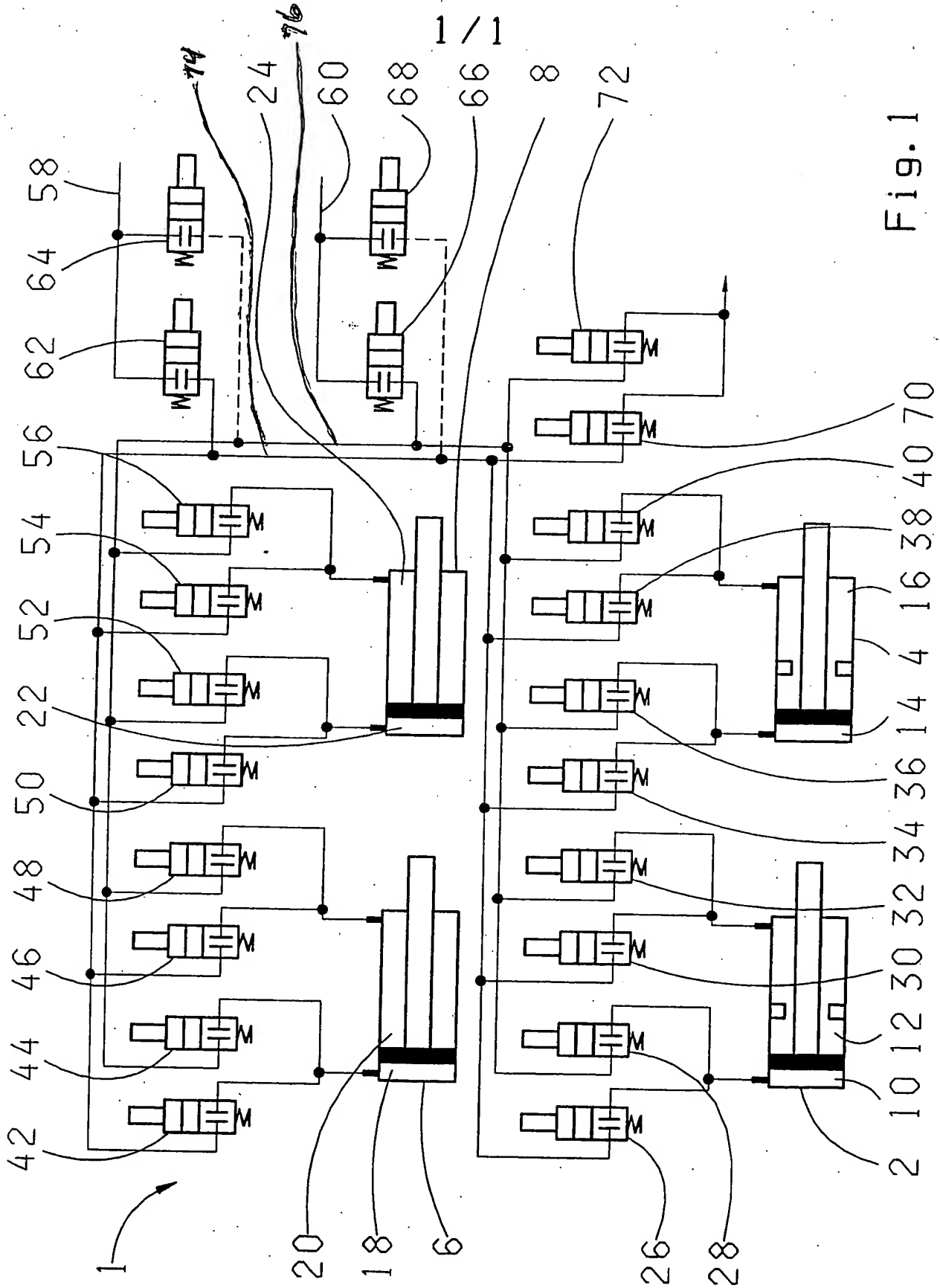


Fig. 1

2011.10.10
2015.06
21